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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,384	03/28/2005	Kazuaki Bando	1207-116	4363
23117 7590 03/29/2011 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
SCRUGGS, ROBERT J				
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3723				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/529,384

**Applicant(s)**

BANDO, KAZUAKI

**Examiner**

ROBERT SCRUGGS

**Art Unit**

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13, 15, 17, 18, 25 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 15, 17, 18, 25 and 26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-940)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to the amendment received on January 11, 2011. Claims 13, 15, 17, 18 25 and 26 remain pending in the application and have been fully examined.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13, 15, 17, 18 and 25 are **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bando (5396736) in view of Lupi (6068547), Ercole et al. (4848005), Monforte (4809425) and Isogai et al. (2002/0021953).

In reference to claims 13, 15, 25 and 26, Bando discloses a glass-plate working apparatus comprising; grinding means (8) for grinding a peripheral edge of a glass plate (22), grinding supporting means (19) for supporting the glass plate whose peripheral edge is to be ground by said grinding means and transporting means formed with multiple lifting devices, one lifting device (56a) (Figure 1) for raising the glass plate to be carried in, another lifting device (56B) for raising the glass plate on the suction cup to be carried out the lifting devices are mounted to a slider (55) which is linearly movable in one direction, wherein said grinding supporting means includes a grinding supporting table (19) and teaches of using a single sucker unit for sucking the glass plate, wherein

said grinding supporting means is movable in a direction (i.e. Y-axis) different from said direction in which said slider is linearly movable (i.e. X-axis) (Column 4, Lines 44-49), but lacks, a plurality of suction cups being separated and individually movable relative to each other and being held on said grinding supporting table being attached by suction to said grinding supporting table to suck and hold the glass-plate by sucking the glass plate whose peripheral edge is to be ground and arranging means for disposing said plurality of suction cups, respectively, at positions corresponding to a shape of the glass-plate to be ground, wherein said suction cups include a cylindrical body/hollow member whose upper surface is covered with an elastic member for abutment against the glass plate, a disk body for abutment against said grinding supporting table and a connecting shaft which connects said disk body and said cylindrical body, and wherein said arranging means includes a suction-cup supporting body for supporting said suction cups separately from said grinding supporting table, a suction-cup lifting device for raising the suction cup which is supported by said grinding supporting table or the suction-cup supporting body, wherein said suction-cup lifting device includes a gripper for gripping the suction cup, and an air cylinder unit having a movable piston rod to one end of which the gripper is fixed, wherein said gripper has at least two grip arms which are moved close to or away from each other, an attachment body to which said grip arms are attached, and a rotating mechanism for synchronously rotating the grip arms with each other, about shafts provided in the attachment body as compressed air is supplied wherein said air cylinder unit is fixed to a slider, and the attachment body is secured to the one end of the piston rod, wherein said at least two grip arms have

recessed surfaces which are recessed with respect to said cylindrical body respectively and a suction-cup moving device which is adapted to move said suction cup raised by said suction-cup lifting device from on said grinding supporting table onto said suction-cup supporting body or from on said suction-cup supporting body onto said grinding supporting table in correspondence with the shape of the glass plate whose peripheral edge is to be ground by said grinding means. However, Lupi teaches a technique of supporting a glass plate a glass-plate (23) to a table (i.e. bottom surface of Figure 4) by using a plurality of suction cups (1, 1") that are separate and individually movable relative to each other and that can be arranged to the shape of the glass-plate (Column 1, Lines 57-67) and wherein said suction cup includes a cylindrical body/hollow member (1) whose upper surface is covered with an elastic member (11) for abutment against the glass plate (23), a disk body (2) for abutment against said grinding supporting table (when combined with Bando), and a connecting shaft (formed from elements 6 and 8) which connects said disk body and said cylindrical body. It would have been obvious to one of ordinary skill in the art to modify the device, of Bando, with the known technique of securing a glass-plate to a table by using a plurality of suction cups that are separate and individually movable relative to each other and that can be arranged according to the shape of the glass-plate, as taught by Lupi, and the results would have been predictable. In this situation, one could more effectively position a plurality of suction cups individually according to a desired workpiece profile thereby more effectively supporting a glass-plate during operation. In addition, Ercole et al. teach a technique of providing arranging means that separately move work supporting elements (10)

(Column 2, Lines 51-52, the work is not shown) from a worktable (2) by a linear movement of a pick-up tool (11) that is attached to a moving frame (3) (or slider) for selectively picking up said movable elements (10) from a support body (12) that supports said suction cups separately from said worktable (2) [i.e. the support body supports the elements at upper and medial portions which are separate from the lower portion of the element which the worktable supports and the examiner notes that if the applicant is trying to disclose different tables or different table surfaces for holding the elements than this to is also known in the art because one could provide two separate table surfaces or tables, one for conducting work (2a) and one for storing elements (2b) as evident by Ercole et al. 5625959, since table (2a) includes holes (9) and table (2b) does not] and positions said elements on said worktable or picks up said elements from said worktable and positions said elements back in said support body (Figure 1). It would have been obvious to one of ordinary skill in the art to modify the device, of Bando, with the known technique of providing automatic arranging means attached to a slider, as taught by Ercole et al., and the results would have been predictable. In this situation, since Bando teaches that multiple lifting devices (56a-c) are mounted to a slider, the pick-up tool, as taught by Ercole et al., that selectively positions that work supporting elements could also be mounted to slider (55) thereby providing a device that can more accurately and quickly position work supporting elements according to the work being used thus saving time and expense. Next, Monforte teaches that it is old and well known in the art to form a robotic holder from multiple types of end effectors (Figures 3a-3h) and that they are all equivalent to one another, wherein one of said end

effectors being formed with gripping fingers (Figure 3f) (210) that move toward and away from one another. Finally, Isogai et al. teach of forming a robotic holder with grippers (370) that are driven by an air cylinder unit (394) having a movable piston rod (402) to one end of which the gripper is fixed, wherein said gripper has at least two grip arms (37) which are moved close to or away from each other, an attachment body (438) to which said grip arms are attached, and a rotating mechanism (434) for synchronously rotating the grip arms with each other, about shafts provided in the attachment body as compressed air is supplied, wherein said at least two grip arms have recessed surfaces which are recessed with respect to said cylindrical body respectively (Figure 5). It would have been obvious to one of ordinary skill in the art to modify the arranging means, of Bando, with the known technique of providing arranging means formed as a lifting device having with grippers (instead of a pin) that move toward or away from each other and which are driven by an air cylinder having a movable piston rod, as taught by Monforte and Isogai et al., and the results would have been predictable. In this situation, one could provide a lifting device that can pick up various sized support elements with a stronger grasp that may be maintained and controlled more accurately.

In reference to claim 17, Lupi also shows that the suction cup is formed with an annular abutment surface (9), a recessed surface (10) held by suction (Figure 1).

In reference to claim 18, Lupi also discloses that the suction cup includes a disk body having the annular abutment surface and the recessed surface (as previously discussed

above), a cylindrical body (1) whose upper surface is covered with an elastic member (11) for abutment against a lower surface of the glass plate (23) and a connecting shaft (formed from elements 6 and 8) which connects a disk body (2) and said cylindrical body, said suction cup being adapted to suck the glass plate through an opening in an upper surface of said elastic member and to be attached by suction to said grinding supporting table through the opening in the recessed surface of said disk body (Figure 1).

4. Claim 26, is **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bando (5396736) in view of Lupi (6068547), Ercole et al. (4848005) and Monforte (4809425).

In reference to claim 26, Bando discloses a glass-plate working apparatus comprising; grinding means (8) for grinding a peripheral edge of a glass plate (22), grinding supporting means (19) for supporting the glass plate whose peripheral edge is to be ground by said grinding means and transporting means formed with multiple lifting devices, one lifting device (56a) (Figure 1) for raising the glass plate to be carried in, another lifting device (56B) for raising the glass plate on the suction cup to be carried out the lifting devices are mounted to a slider (55) which is linearly movable in one direction, wherein said grinding supporting means includes a grinding supporting table (19) and teaches of using a single sucker unit for sucking the glass plate, wherein said grinding supporting means is movable in a direction (i.e. Y-axis) different from said



direction in which said slider is linearly movable (i.e. X-axis) (Column 4, Lines 44-49), but lacks, a plurality of suction cups being separated and individually movable relative to each other and being held on said grinding supporting table being attached by suction to said grinding supporting table to suck and hold the glass-plate by sucking the glass plate whose peripheral edge is to be ground and arranging means for disposing said plurality of suction cups, respectively, at positions corresponding to a shape of the glass-plate to be ground, wherein said suction cups include a cylindrical body/hollow member whose upper surface is covered with an elastic member for abutment against the glass plate, a disk body for abutment against said grinding supporting table and a connecting shaft which connects said disk body and said cylindrical body, and wherein said arranging means includes a suction-cup supporting body for supporting said suction cups separately from said grinding supporting table, a suction-cup lifting device for raising the suction cup which is supported by said grinding supporting table or the suction-cup supporting body and a suction-cup moving device which is adapted to move said suction cup raised by said suction-cup lifting device from on said grinding supporting table onto said suction-cup supporting body or from on said suction-cup supporting body onto said grinding supporting table in correspondence with the shape of the glass plate whose peripheral edge is to be ground by said grinding means. However, Lupi teaches a technique of supporting a glass plate a glass-plate (23) to a table (i.e. bottom surface of Figure 4) by using a plurality of suction cups (1, 1") that are separate and individually movable relative to each other and that can be arranged to the shape of the glass-plate (Column 1, Lines 57-67) and wherein said suction cup includes

a cylindrical body/hollow member (1) whose upper surface is covered with an elastic member (11) for abutment against the glass plate (23), a disk body (2) for abutment against said grinding supporting table (when combined with Bando), and a connecting shaft (formed from elements 6 and 8) which connects said disk body and said cylindrical body. It would have been obvious to one of ordinary skill in the art to modify the device, of Bando, with the known technique of securing a glass-plate to a table by using a plurality of suction cups that are separate and individually movable relative to each other and that can be arranged according to the shape of the glass-plate, as taught by Lupi, and the results would have been predictable. In this situation, one could more effectively position a plurality of suction cups individually according to a desired workpiece profile thereby more effectively supporting a glass-plate during operation. In addition, Ercole et al. teach a technique of providing arranging means that separately move work supporting elements (10) (Column 2, Lines 51-52, the work is not shown) from a worktable (2) by a linear movement of a pick-up tool (11) that is attached to a moving frame (3) (or slider) for selectively picking up said movable elements (10) from a support body (12) that supports said suction cups separately from said worktable (2) [i.e. the support body supports the elements at upper and medial portions which are separate from the lower portion of the element which the worktable supports and the examiner notes that if the applicant is trying to disclose different tables or different table surfaces for holding the elements than this to is also known in the art because one could provide two separate table surfaces or tables, one for conducting work (2a) and one for storing elements (2b) as evident by Ercole et al. 5625959, since table (2a)

includes holes (9) and table (2b) does not] and positions said elements on said worktable or picks up said elements from said worktable and positions said elements back in said support body (Figure 1). It would have been obvious to one of ordinary skill in the art to modify the device, of Bando, with the known technique of providing automatic arranging means attached to a slider, as taught by Ercole et al., and the results would have been predictable. In this situation, since Bando teaches that multiple lifting devices (56a-c) are mounted to a slider, the pick-up tool, as taught by Ercole et al., that selectively positions that work supporting elements could also be mounted to slider (55) thereby providing a device that can more accurately and quickly position work supporting elements according to the work being used thus saving time and expense. Next, Monforte teaches that it is old and well known in the art to form a robotic holder from multiple types of end effectors (Figures 3a-3h) and that they are all equivalent to one another, wherein one of said end effectors being formed with gripping fingers (Figure 3f) (210) that move toward and away from one another. It would have been obvious to one of ordinary skill in the art to modify the arranging means, of Bando, with the known technique of providing arranging means formed as a lifting device having with grippers (instead of a pin) that move toward or away from each other and which are driven by an air cylinder having a movable piston rod, as taught by Monforte, and the results would have been predictable. In this situation, one could provide a lifting device that can pick up various sized support elements with a stronger grasp on the selected element.

***Response to Arguments***

5. Applicant's arguments with respect to claims 13 and 25 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Specifically, the applicant further defined the suction cups, and the suction cup lifter. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT SCRUGGS whose telephone number is (571)272-8682. The examiner can normally be reached on Monday-Friday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT SCRUGGS/  
Primary Examiner, Art Unit 3723